CLAIMS

1. A method for coproduction of methanol and ammonia from natural gas, characterized by the following steps:

1.1 natural gas (stream 1), steam and oxygen from an air separator G are mixed with each other in a reactor A, the natural gas being partially oxidized and further reformed with the aid of catalysts,

1.2 the gas mixture taken from reactor A is divided into a stream (stream 2) for methanol synthesis in a unit E and another stream (stream 3) for hydrogen production,

1.3 the carbon monoxide present in the stream (stream 3) for hydrogen production is converted to carbon dioxide in reactor B with the help of catalysts and intermediate cooling stages,

1.4 remaining impurities, such as methane, traces of carbon monoxide and argon with liquid nitrogen (stream 12) from an air separator G, are washed out in purification unit D, and hydrogen (streams 6 and 8) is fed to the methanol synthesis in unit E and the ammonia synthesis in a unit F, residual impurities being used as fuel for the process oven,

1.5 methanol synthesis gas (stream 7) is converted to methanol (stream 9) with help from a catalyst in unit E and the methanol is brought to the required purity by distillation,

1.6 ammonia synthesis gas (stream 8) is compressed in unit F and with the help of a catalyst is converted to ammonia (stream 10) and the ammonia is separated from recovered synthesis gas by means of partial condensation.

2. The method according to claim 1, characterized in that in the step 1.1 part of the natural gas is first fed though a steam reformer, subsequently mixed with the excess natural gas and is fed into a CPOX reactor.

3. The method according to one of the preceding claims, characterized in that the gas mixture (stream 4) from reactor B is compressed in a compressor and absorber C, the carbon dioxide is washed out and the gas mixture (stream 5) fed to the purification unit D.

4. The method according to claim 3, characterized in that in the compressor and absorber C a physical washing with the help of a suitable absorbent, especially cold methanol or glycolether, is carried out.

5. The method according to claim 3, characterized in that in the compressor and absorber a chemical washing with a suitable absorbent, especially an alkanolamine, a polyalkanolamine or potassium carbonate is carried out.

6. The method according to one of claims 3 through 5, characterized in that the carbon dioxide produced in the compressor and absorber C (stream 14) is used for urea manufacture.

7. The method according to one of claims 3 through 6, characterized in that the hydrogen (stream 6) fed to the methanol synthesis gas is obtained from the compressor and absorber C.